

09/92 163A

3/28/03

C:\WINDOWS>A:

A:>DIR

Volume in drive A has no label
Volume Serial Number is 2415-16DD
Directory of A:\

213930~1 TXT 18,735 10-09-01 5:03p 213930US0PCT.txt
1 file(s) 18,735 bytes
0 dir(s) 1,438,720 bytes free

A:>TYPE 213930~1.TXT | MORE

Read fault error reading drive A
Abort, Retry, Fail?F
Fail on INT 24 - 213930~1.TXT

A:>

On-screen message when STIC PC
attempted to read file



Methods Enzymol. 1982;89:141-145

D-sorbitol dehydrogenase from *Gluconobacter suboxydans*, membrane-bound

Shinagawa, E.; Ameyama, M.; *review*

Legend:  = valid for all references of this EC number;  = valid only for this reference;  = valid for all references of this EC Number but only for described organisms (see field "Organism")

Organism: *Gluconobacter suboxydans*

See also following references to EC number 1.1.99.21 (sorted by authors):

2. Shinagawa et al.(1982); 1. Shinagawa et al.(1982);

Recommended Name^{cc}: D-sorbitol dehydrogenase (acceptor)

Systematic Name^{EC}: D-sorbitol:(acceptor) 1-oxidoreductase

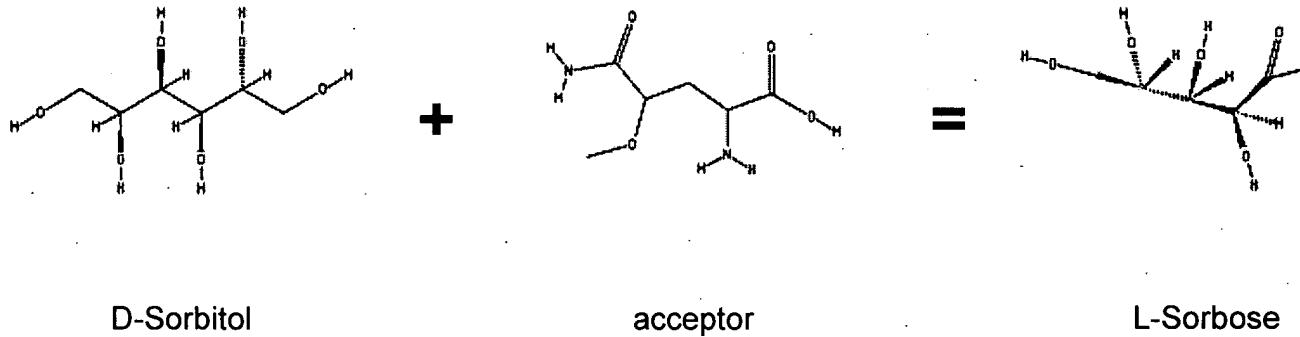
EC Number: 1.1.99.21

CAS Registry Number: 9028-22-2

Reaction 2: D-sorbitol + acceptor = L-sorbose + reduced acceptor

KM Value[mM]/KM Value Max[mM] / 30, D-sorbitol, *Gluconobacter suboxydans*

Substrate/Organism:



Substrates/Products:

(S:=Substrates, CS:=Commentary Substrate, LS:=Literature Substrate, OS:=Organism Substrate, P:=Product, CP:=Commentary Product, LP:=Literature Product, OR:=Organism, OP:=Organism Product, RE:=Reversibility)

Gluconobacter suboxydans:

S= D-sorbitol + acceptor, CS= high specificity, the following dyes act in vitro as acceptors: 2,6-dichlorophenolindophenol, phenazine methosulfate, potassium ferricyanide, nitro blue tetrazolium or tetramethyl-p-phenylenediamine (see ref.: 1), LS= 1,2, OS= *Gluconobacter suboxydans*, P= L-sorbose + reduced acceptor, LP= 1,2, OR= *Gluconobacter suboxydans*, S= D-mannitol + acceptor, CS= oxidation at 5% the rate of D-sorbitol (see ref.: 1, this reference), LS= 1,2, OS= *Gluconobacter suboxydans*, P= ? + reduced acceptor, OP= ? <1,2>

S= more, CS= no oxidation of D-arabitol, L-iditol, meso-erythritol, galactitol, dulcitol, ribitol, xylitol (see ref.: 1, this reference) , LS= 1,2, OS= *Gluconobacter suboxydans*, P= ?, OP= ? <1,2>

Natural Substrat s/Natural Products^{ref.}:

(S:=Natural Substrates, CS:=Commentary Natural Substrate, LS:=Literature Natural Substrate, OS:=Organism Substrate, P:=Natural Product, CP:=Commentary Natural Product, LP:=Literature Natural Product, OR:=Organism, OP:=Organism Natural Product, RE:=Reversibility)

Gluconobacter suboxydans:

S= D-sorbitol + acceptor, CS= high specificity (see ref.: 1, this reference) , LS= 1,2, OS= *Gluconobacter suboxydans*, P= L-sorbose + reduced acceptor, OP= ? <1,2>

Cofactor^{ref.}:

(CF:=Cofactor, CO:=Commentary)

Gluconobacter suboxydans:

CF= FAD, CO= flavoprotein, covalently bound, 0.4 mol/mol enzyme (see ref.: 1)

CF= cytochrome c, CO= tightly bound, dehydrogenase-cytochrome c complex, separable by SDS-PAGE (see ref.: 1, this reference) ; rapid reduction in the presence of coenzyme Q1 (see ref.: this reference)

CF= more, CO= NAD+, NADP+ or molecular oxygen are completely inactive (see ref.: 1, this reference)

Localization^{ref.}:

(LO:=Localization, CO:=Commentary)

Gluconobacter suboxydans:

LO= cytoplasmic membrane, CO= outer surface (see ref.: this reference)

Molecular Weight^{ref.}:

(MW:=Molecular Weight [Da], MWM:=Molecular Weight Maximum [Da], CO:=Commentary)

Gluconobacter suboxydans:

MW= 131000, CO= calculated sum of each MW of the 3 subunits (see ref.: 1, this reference)

Purification^{ref.}:

Gluconobacter suboxydans:

Sp cific Activity^{ref.}:

(SA:=Specific Activity [micromol/min/mg], SM:=Specific Activity Maximum, CO:=Commentary)

Gluconobacter suboxydans:

SA= 433,

Subunits^{ref.}:

(SU:=Sbunits (Molecular Weight in [Da]), CO:=Commentary)

Gluconobacter suboxydans:

SU= more, CO= 1 * 63000 + 1 * 51000 + 1 * 17000, dissociation into 3 components, a flavoprotein (MW 63000), a cytochrome c (MW 51000) and an unknown polypeptide (MW 17000), SDS-PAGE (see ref.: 1, this reference)

T mp rature Optimum^{ref.}:

(TO:=Temperature Optimum[°C], TM:=Temperature Optimum Maximum[°C], CO:=Commentary)

Gluconobacter suboxydans:

TO= 25,

pH Optimum:

(pH :=pH Optimum, pM :=pH Optimum Maximum, CO :=Commentary)

Gluconobacter suboxydans:

pH = 4.5,
